

FIG 1
(PRIOR ART)

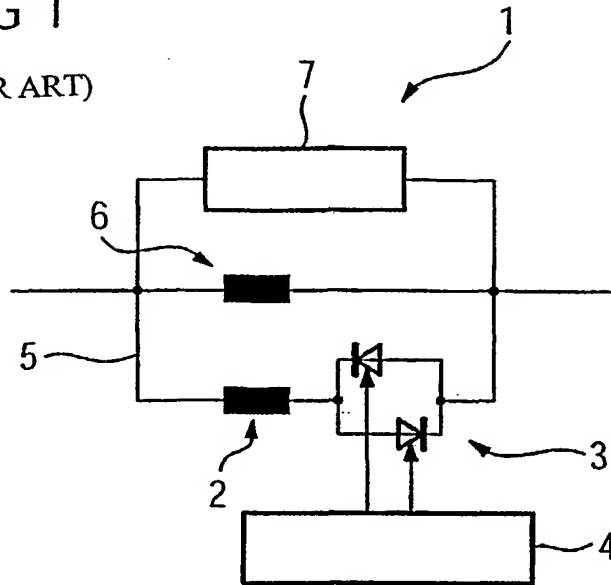


FIG 2

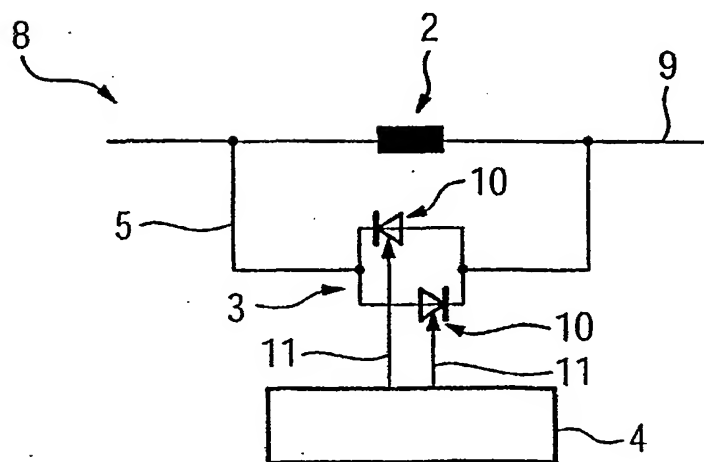


FIG 3a

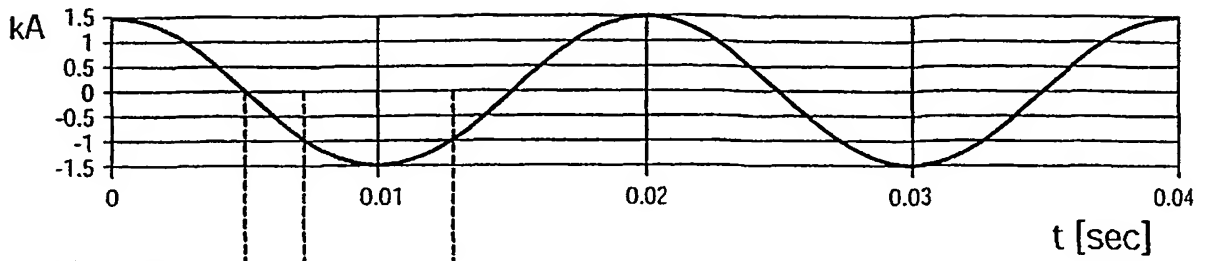


FIG 3b

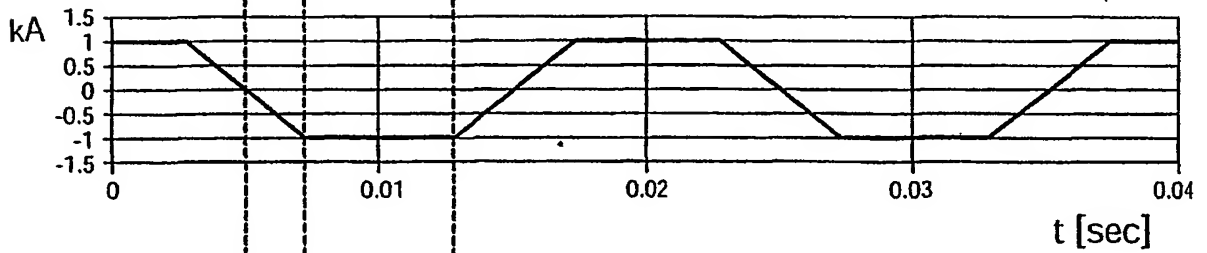


FIG 3c

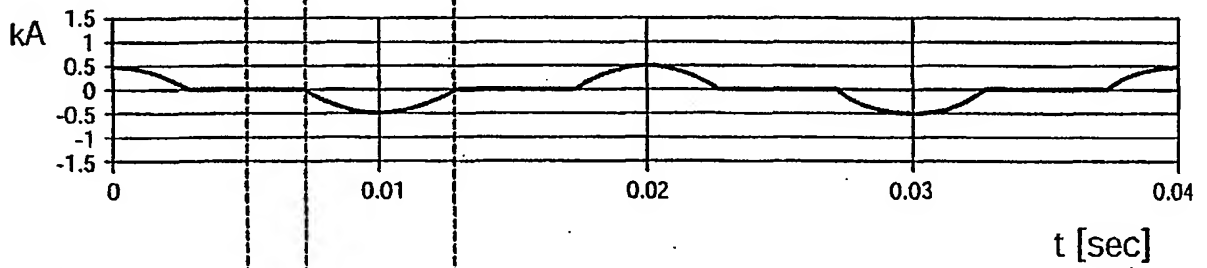


FIG 3d

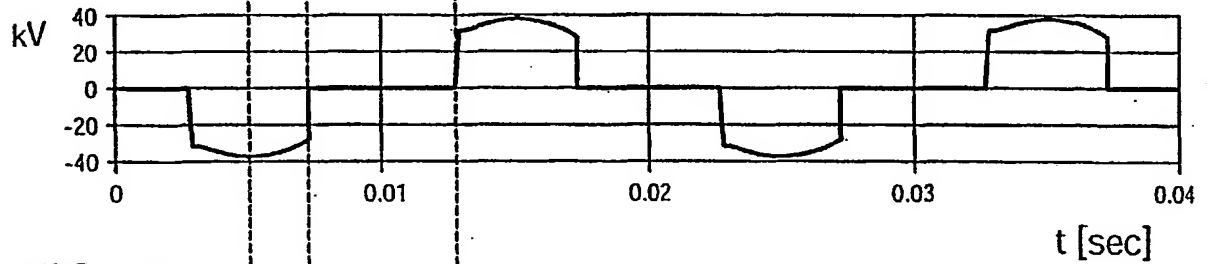


FIG 3e

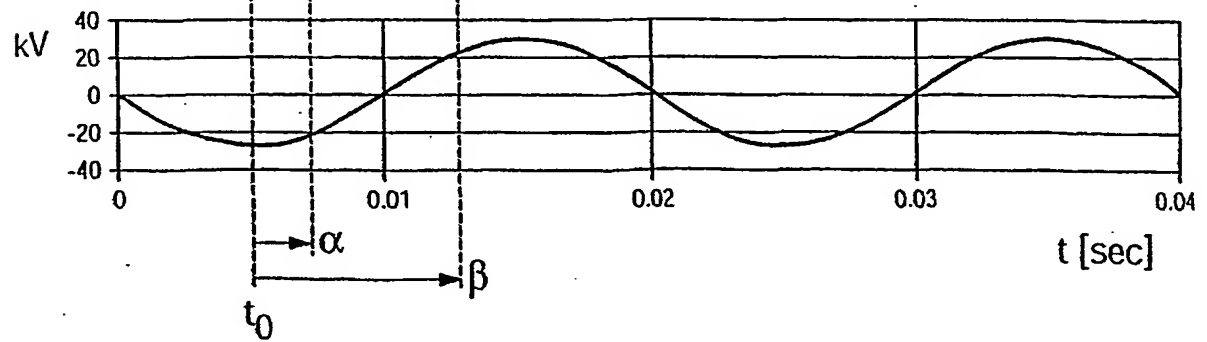


FIG 4

$X_{\text{SUM}} / X_{\text{RSP}}$

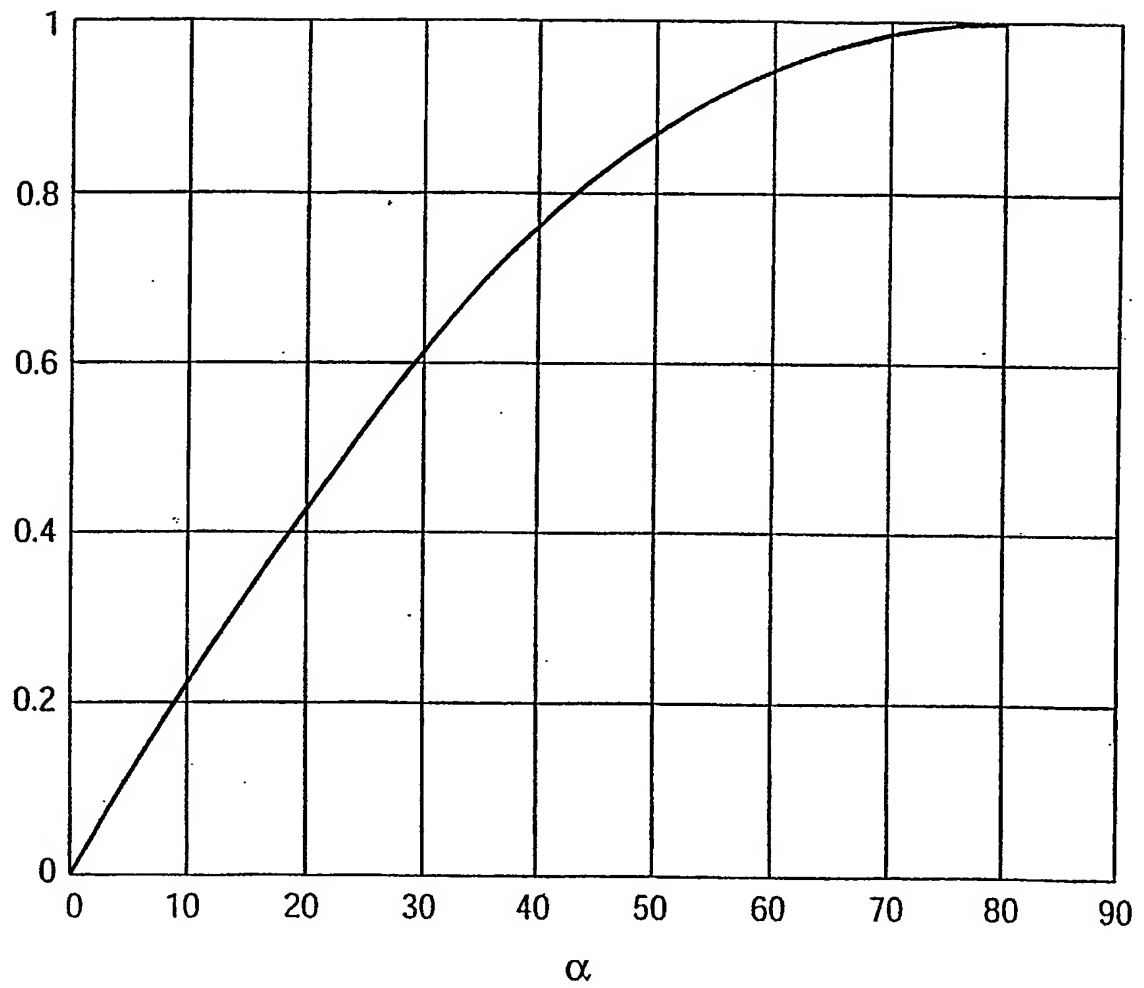


FIG 5a

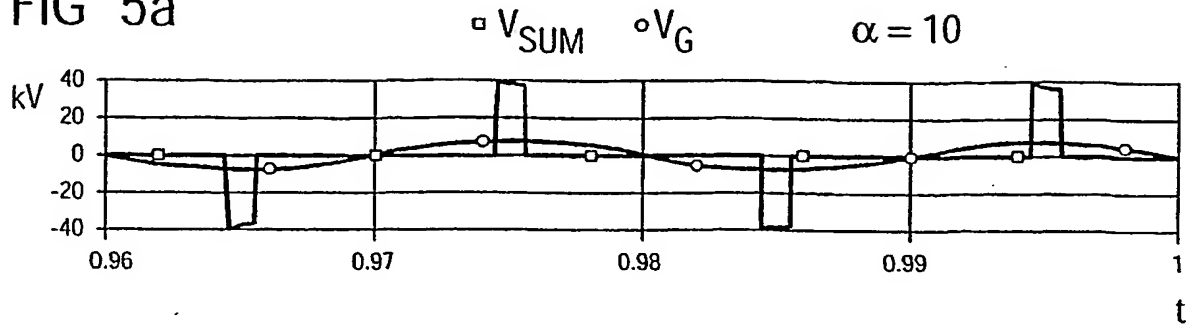


FIG 5b

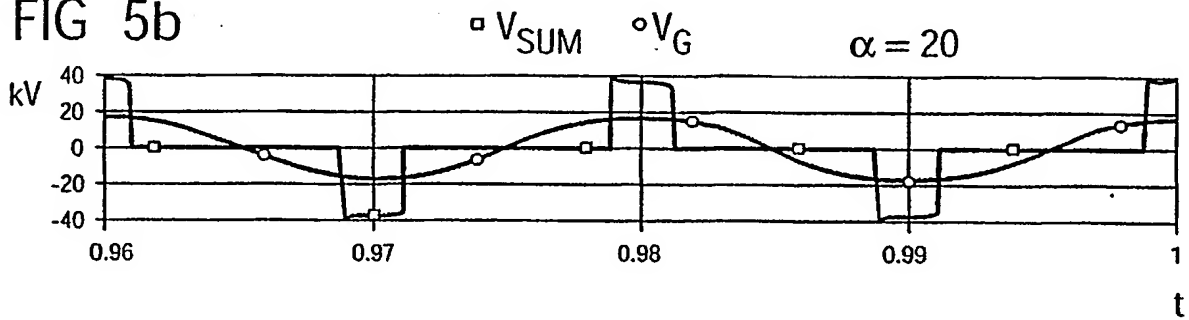


FIG 5c

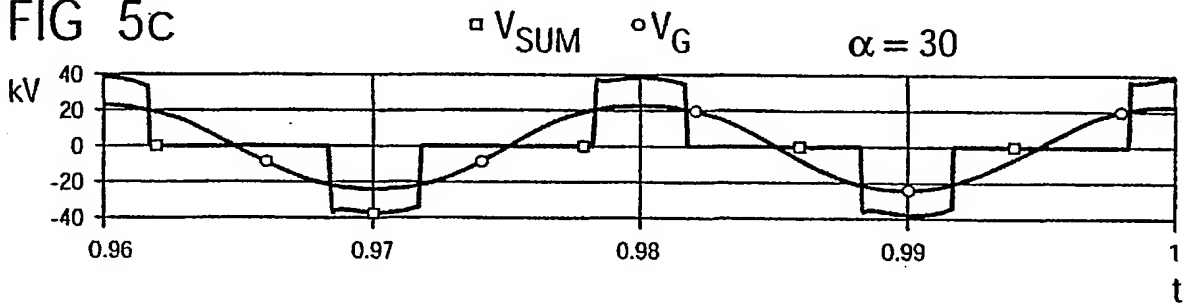


FIG 5d

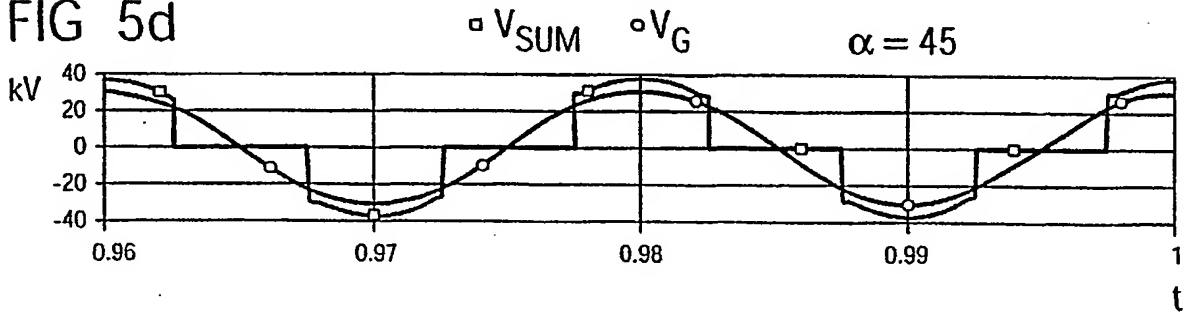


FIG 5e

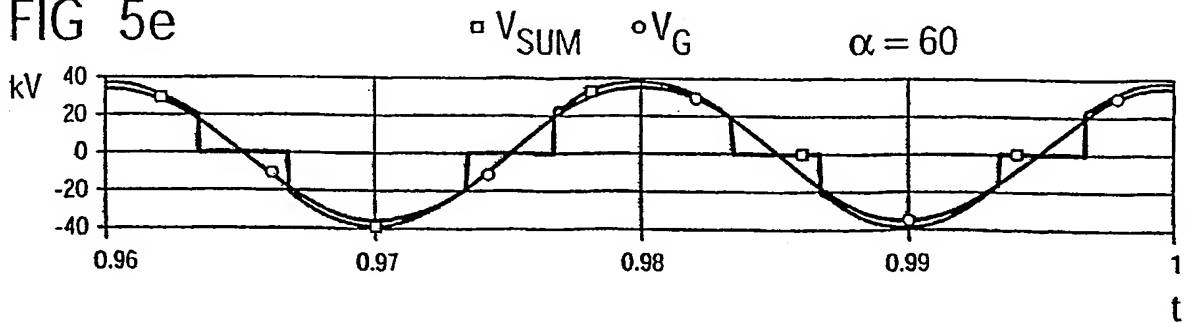


FIG 6a

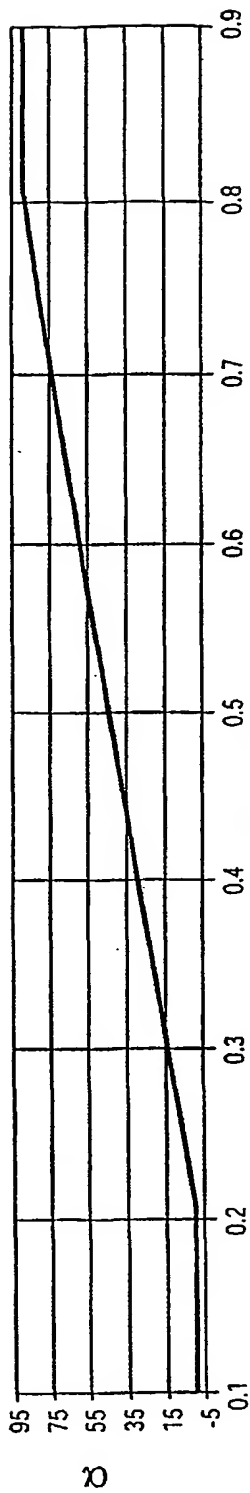


FIG 6b

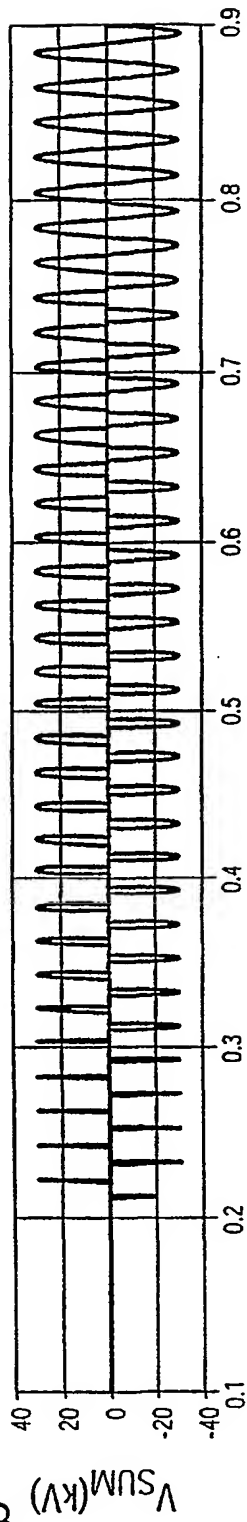


FIG 6c

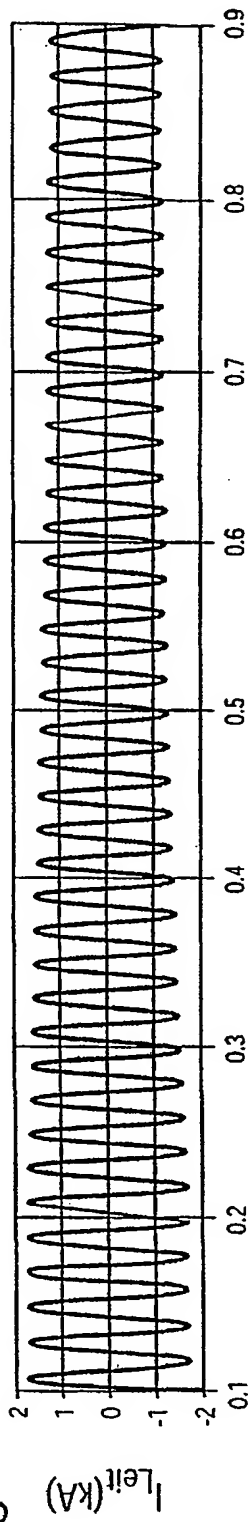


FIG 6d

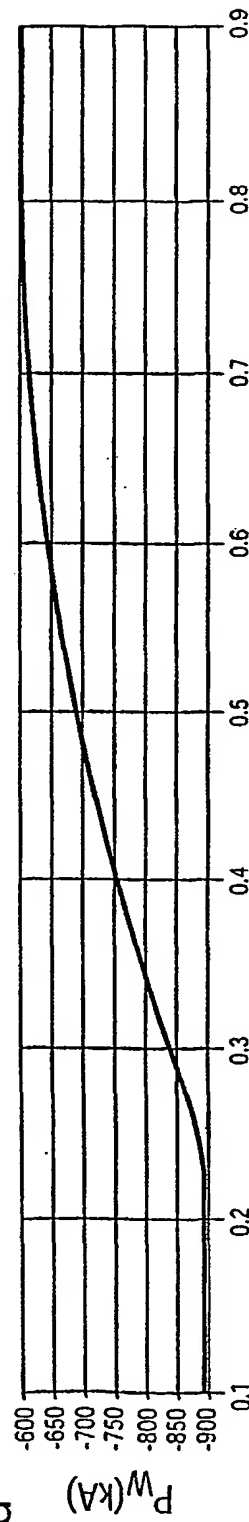


FIG 7

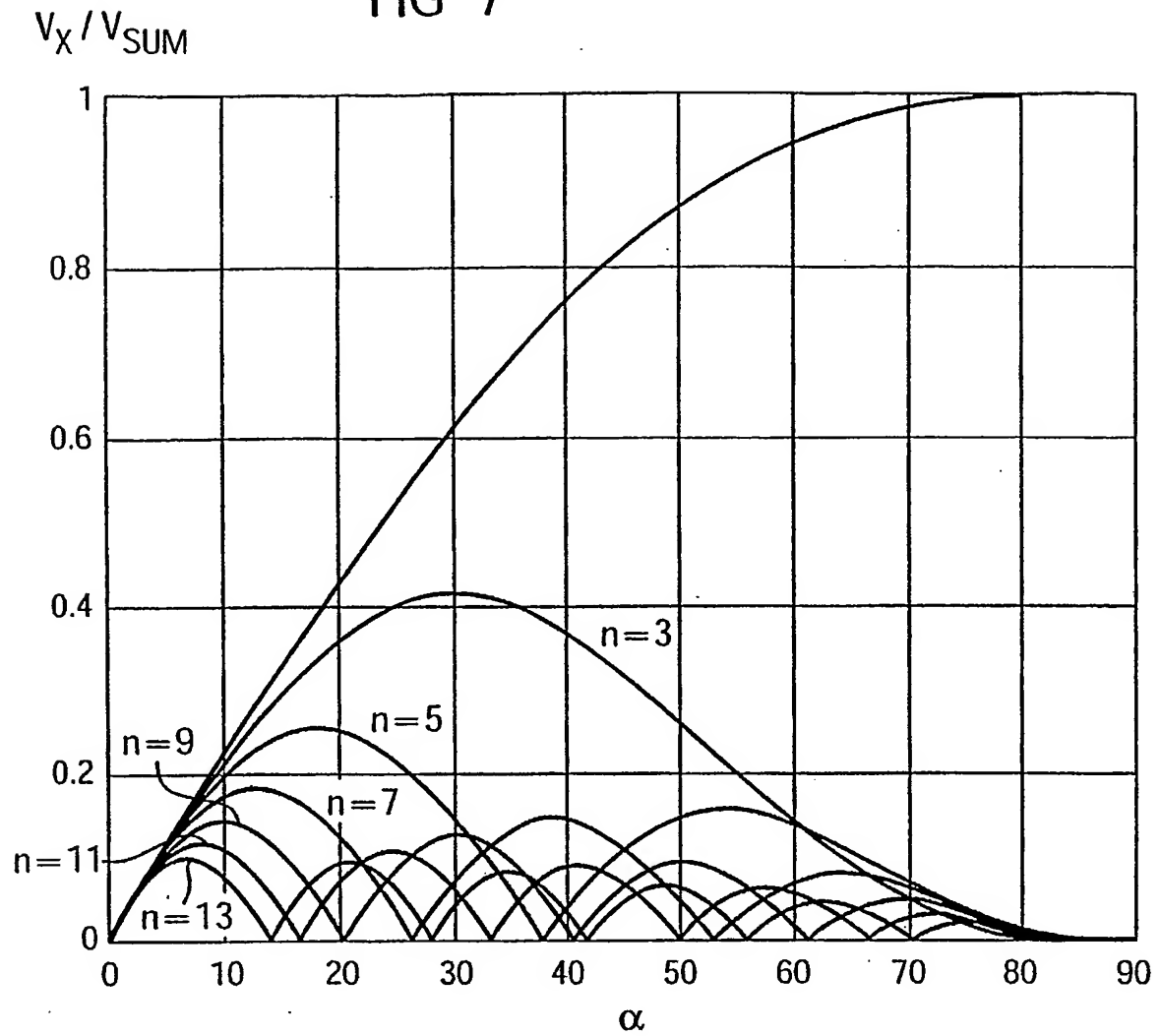
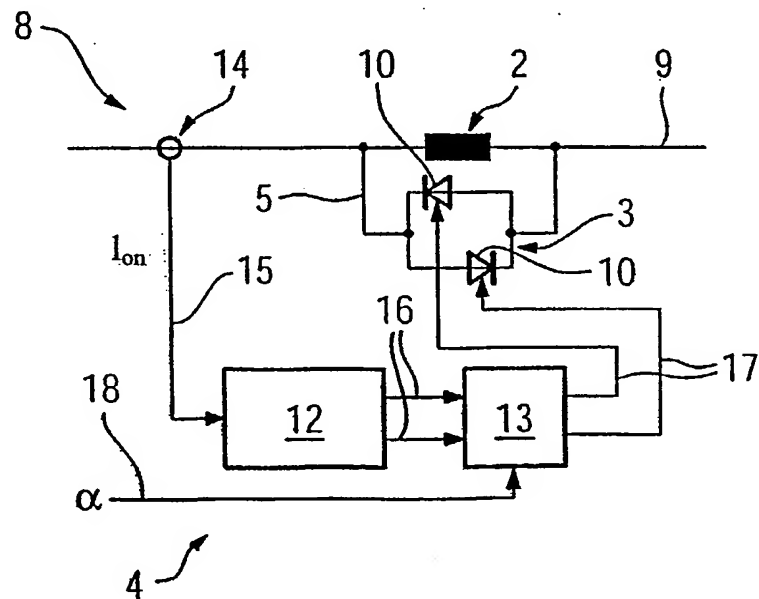


FIG 8



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Attorney Docket.: 071308.0692
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The diagram illustrates a control system for a power semiconductor device. The top section shows the power stage, and the bottom section, enclosed in a dashed box, shows the control stage.

Power Stage (Top):

- A DC voltage source V_{on} (8) is connected to a load (22) and a MOSFET (2).
- The MOSFET (2) is connected to a diode (3) and a current source (14).
- The current source (14) is labeled I_{on} .
- The MOSFET (2) is connected to a diode (3) and a current source (14).
- The MOSFET (2) is connected to a diode (3) and a current source (14).

Control Stage (Bottom, dashed box):

- The control stage includes a feedback loop with blocks 12, 13, 16, 17, 20, 21, 25, 26, 27, 28, 29, 30, 31, 32, 33, and 34.
- Block 12 is a summing junction that receives inputs from 15 and 16.
- Block 13 is a block with transfer function $KI \cdot \frac{1+s \cdot TI}{s \cdot TI}$.
- Block 16 is a block with transfer function $KP \cdot \frac{1+s \cdot TP}{s \cdot TP}$.
- Block 20 is a block with transfer function $KI \cdot \frac{1+s \cdot TI}{s \cdot TI}$.
- Block 21 is a block with transfer function $KP \cdot \frac{1+s \cdot TP}{s \cdot TP}$.
- Block 25 is a summing junction that receives inputs from 20 and 21.
- Block 26 is a summing junction that receives inputs from 25 and 26.
- Block 27 is a block with transfer function $KI \cdot \frac{1+s \cdot TI}{s \cdot TI}$.
- Block 28 is a block with transfer function $KP \cdot \frac{1+s \cdot TP}{s \cdot TP}$.
- Block 29 is a block with transfer function $KI \cdot \frac{1+s \cdot TI}{s \cdot TI}$.
- Block 30 is a block with transfer function $KP \cdot \frac{1+s \cdot TP}{s \cdot TP}$.
- Block 31 is a block with transfer function $KI \cdot \frac{1+s \cdot TI}{s \cdot TI}$.
- Block 32 is a block with transfer function $KP \cdot \frac{1+s \cdot TP}{s \cdot TP}$.
- Block 33 is a block with transfer function $KI \cdot \frac{1+s \cdot TI}{s \cdot TI}$.
- Block 34 is a block with transfer function $KP \cdot \frac{1+s \cdot TP}{s \cdot TP}$.

FIG 10

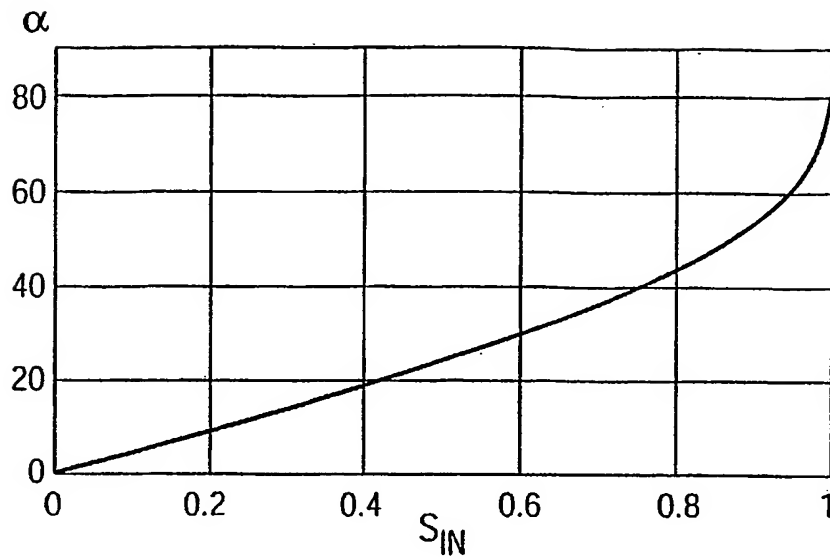


FIG 11

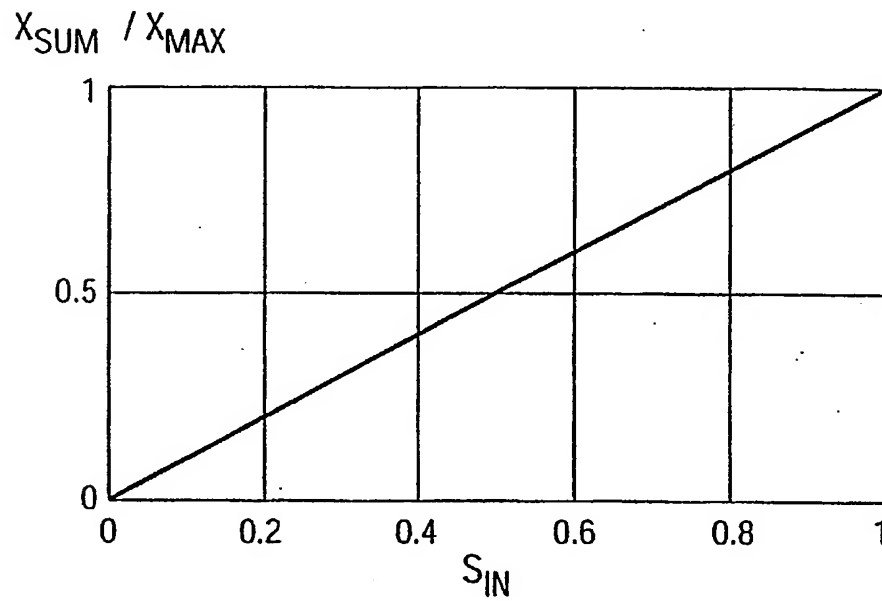


FIG 12

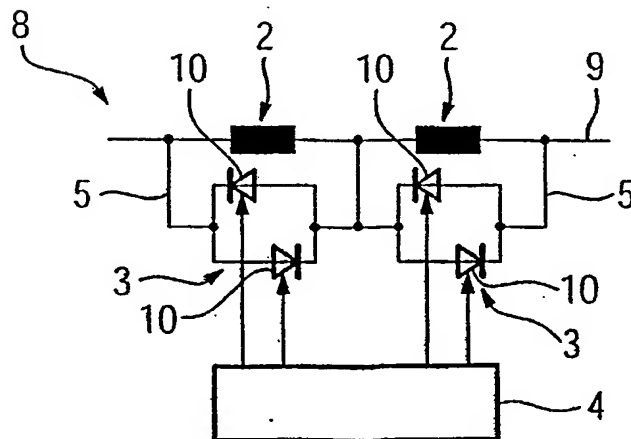


FIG 13

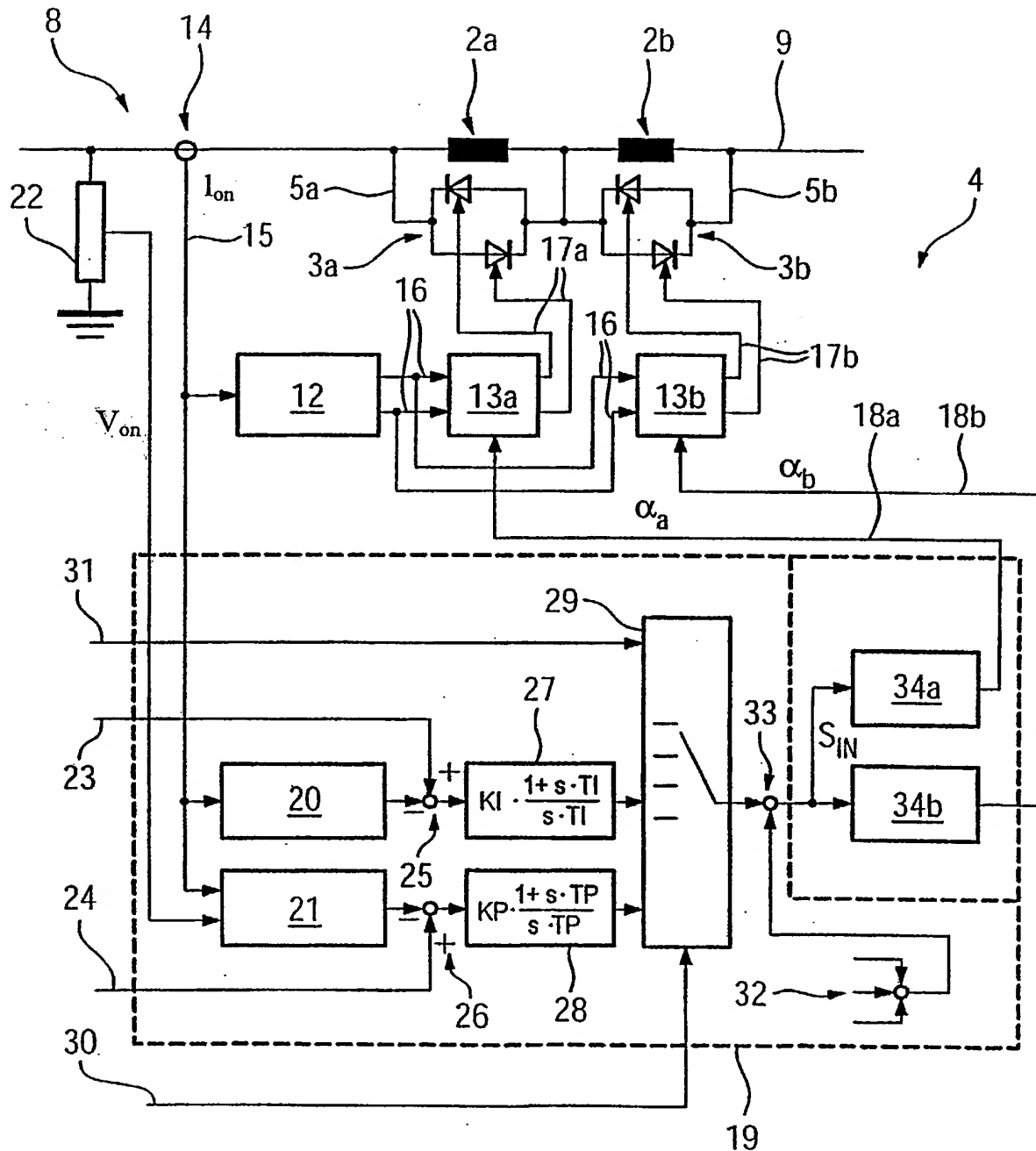


FIG 14

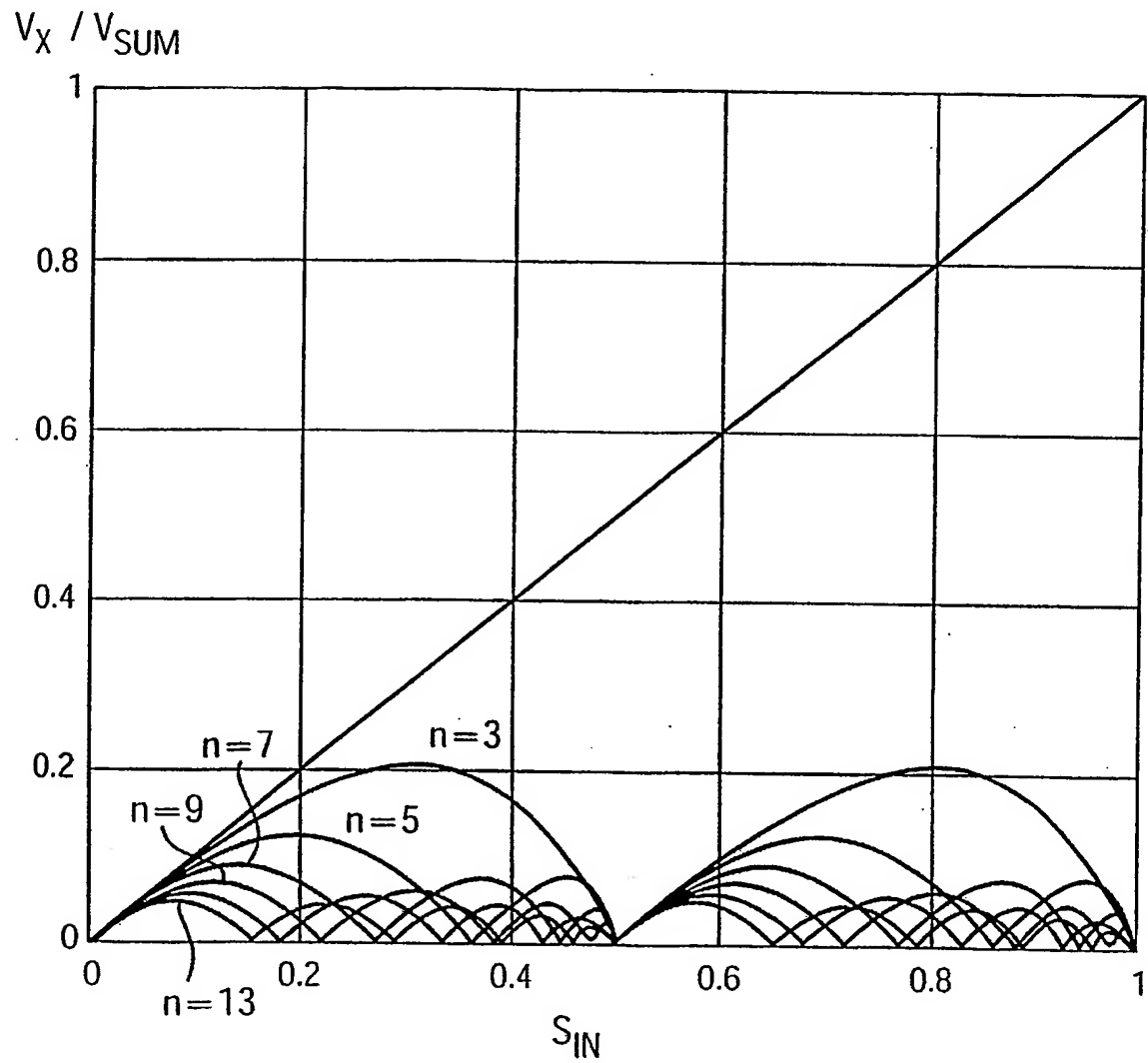


FIG 15a

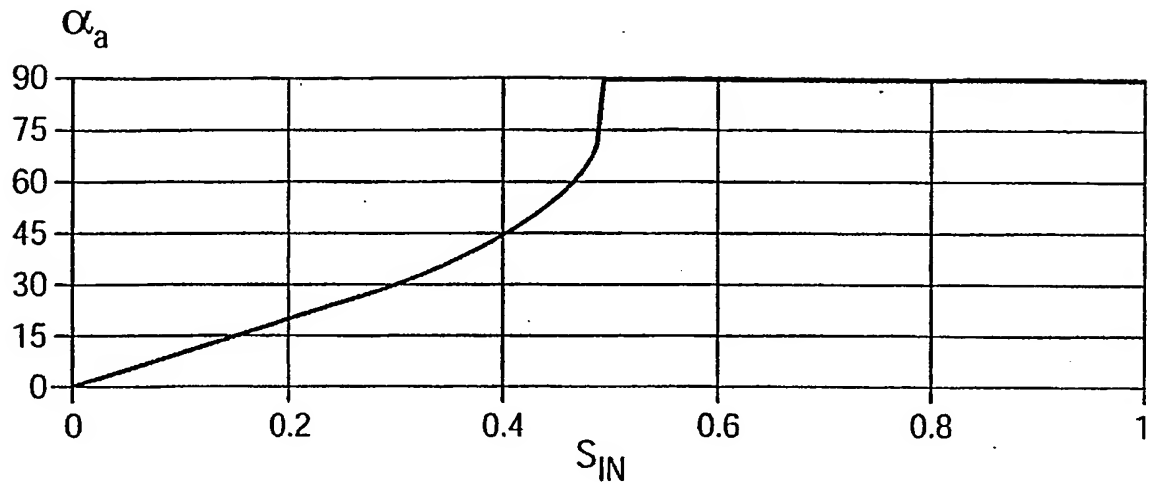


FIG 15b

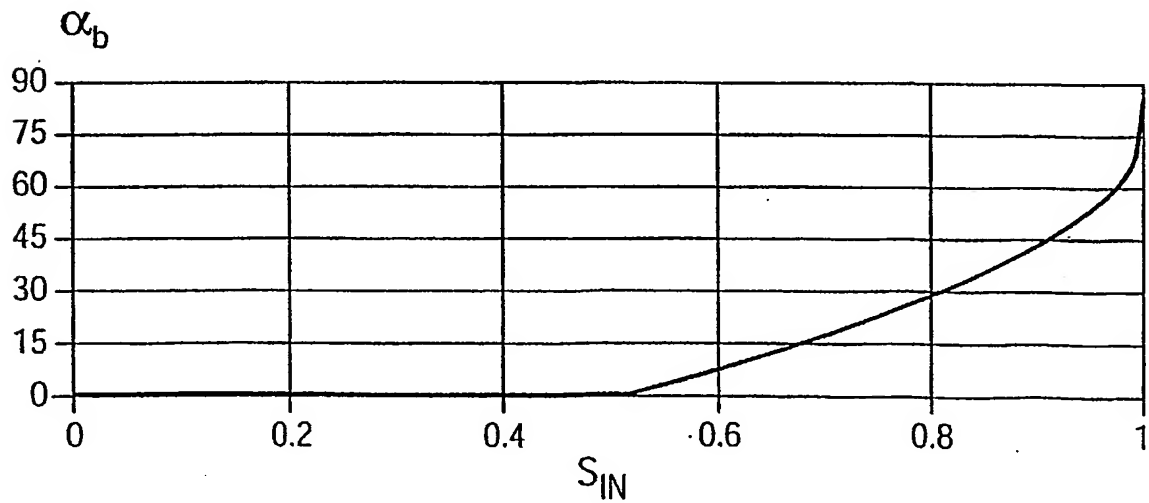


FIG 16

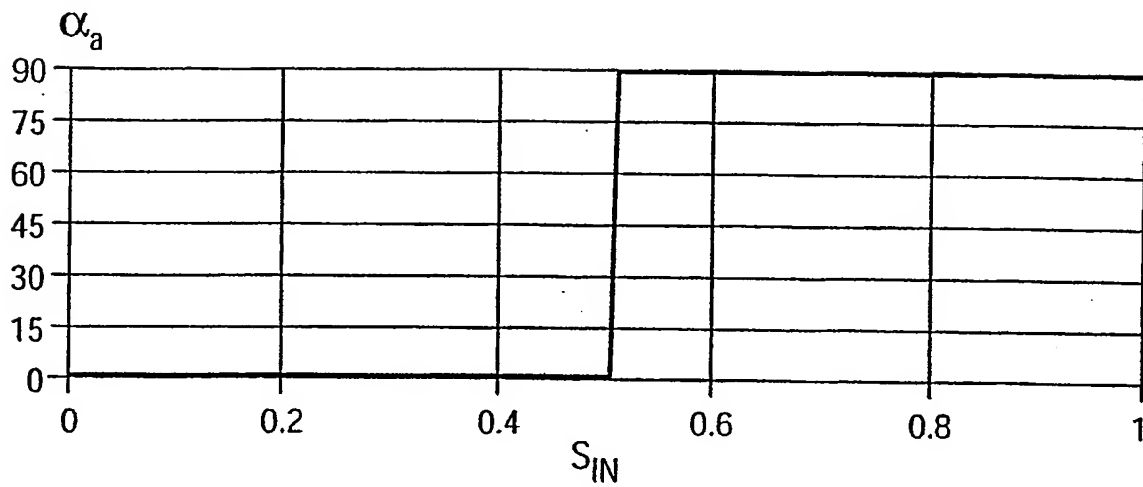


FIG 17

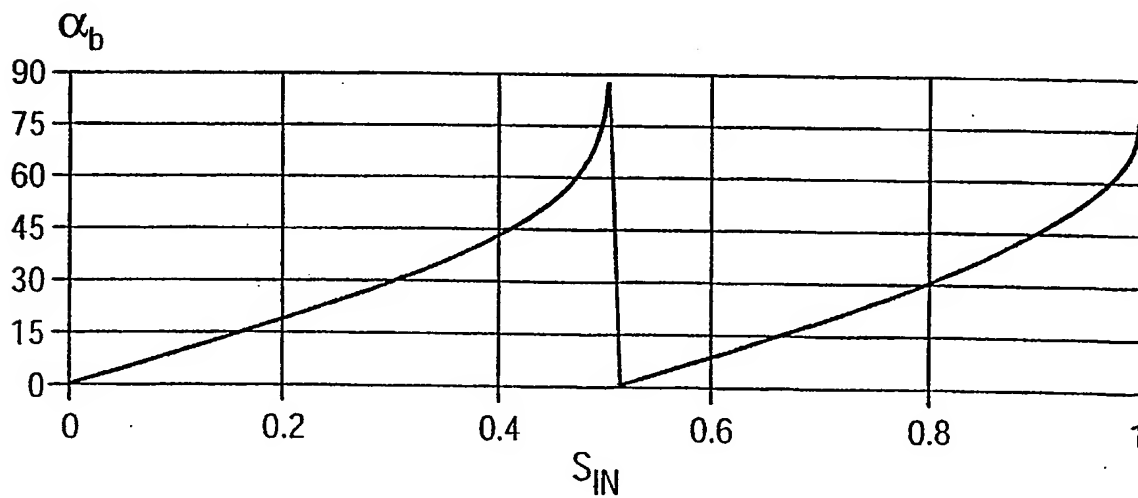


FIG 18

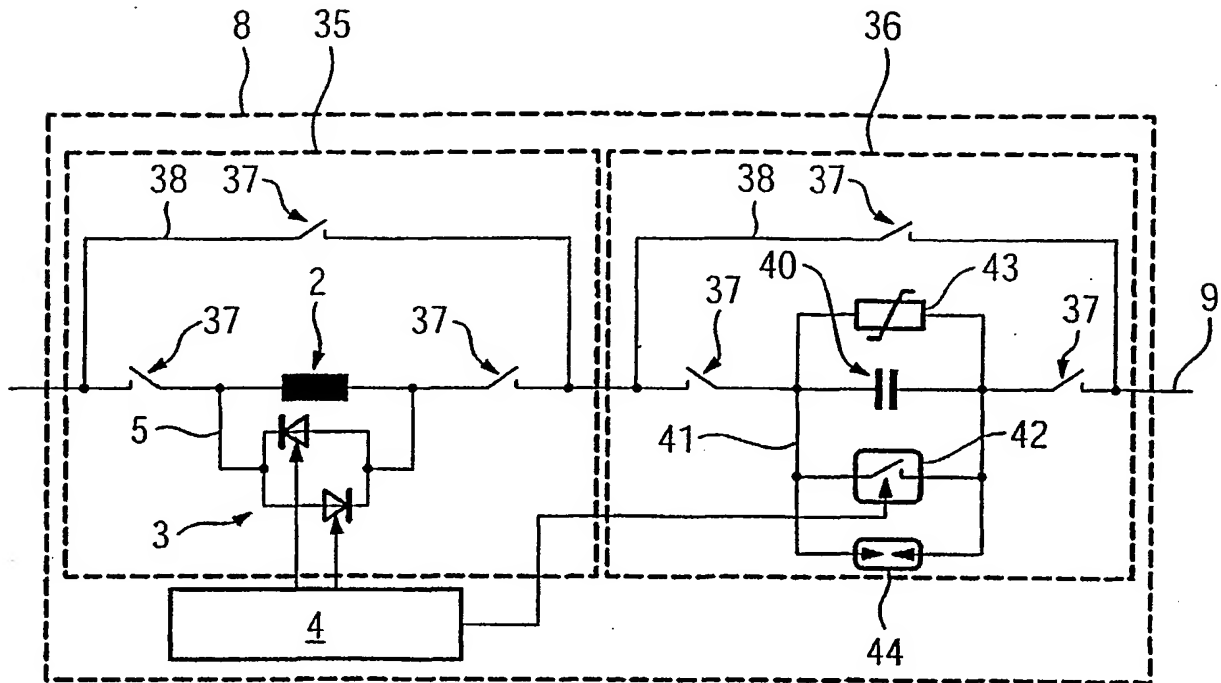


FIG 19

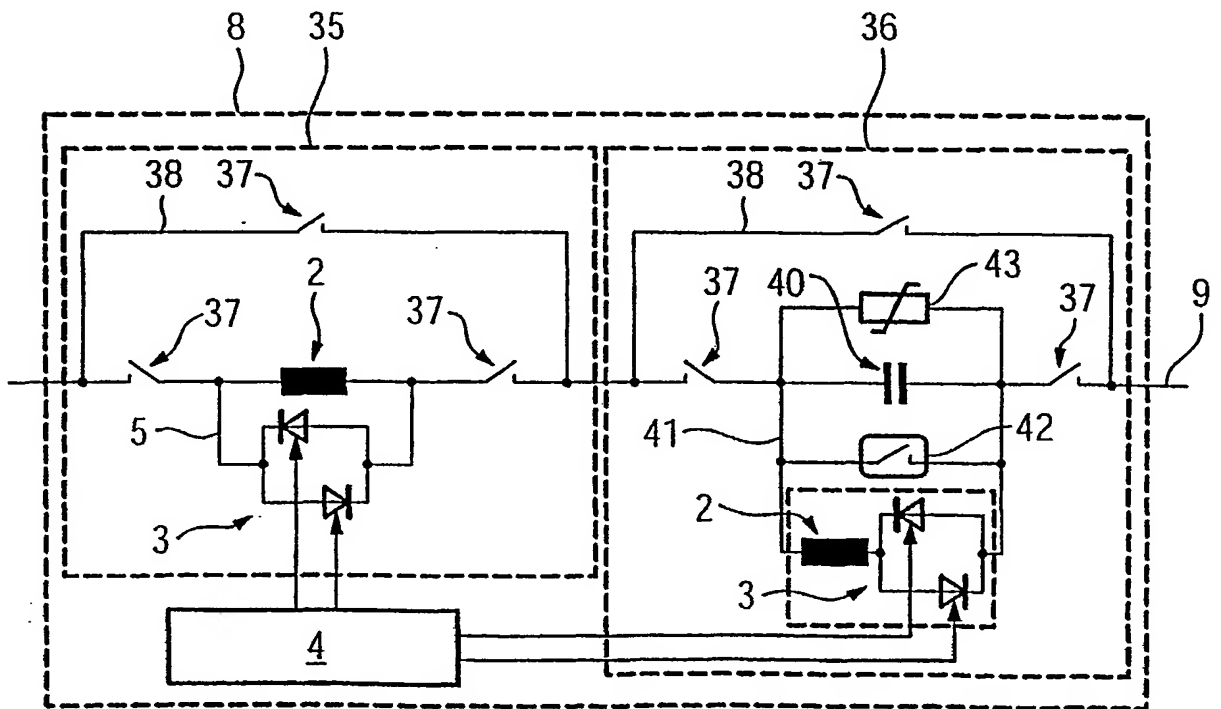


FIG 20

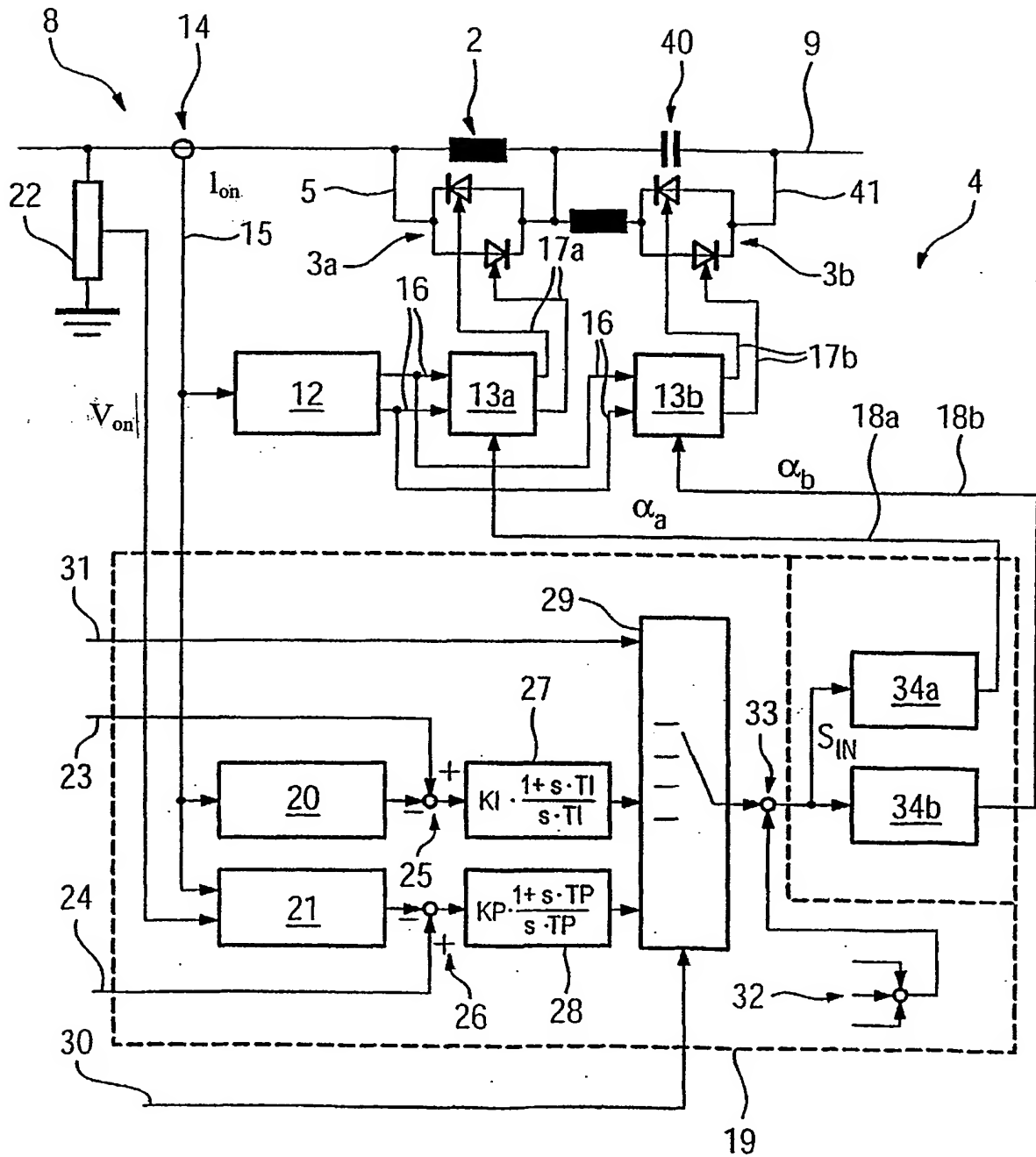


FIG 21

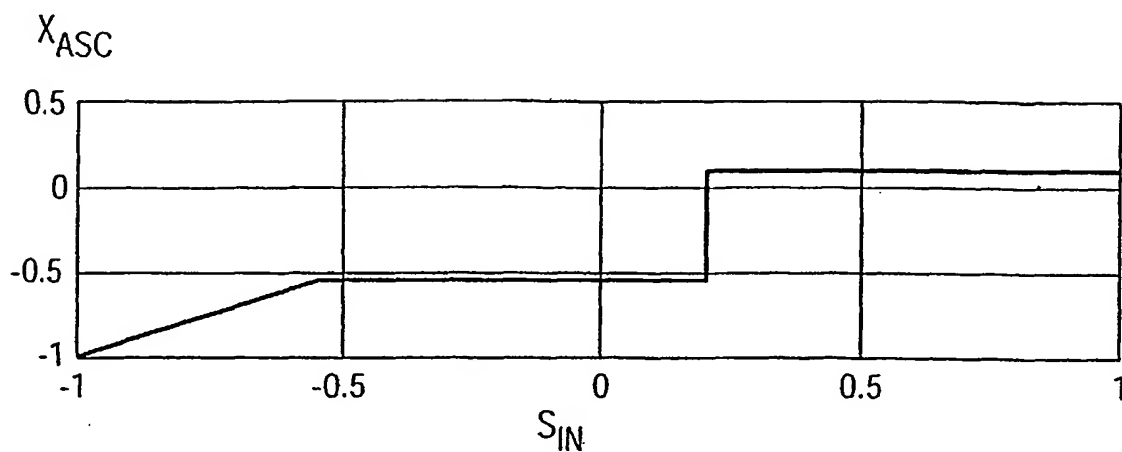


FIG 22

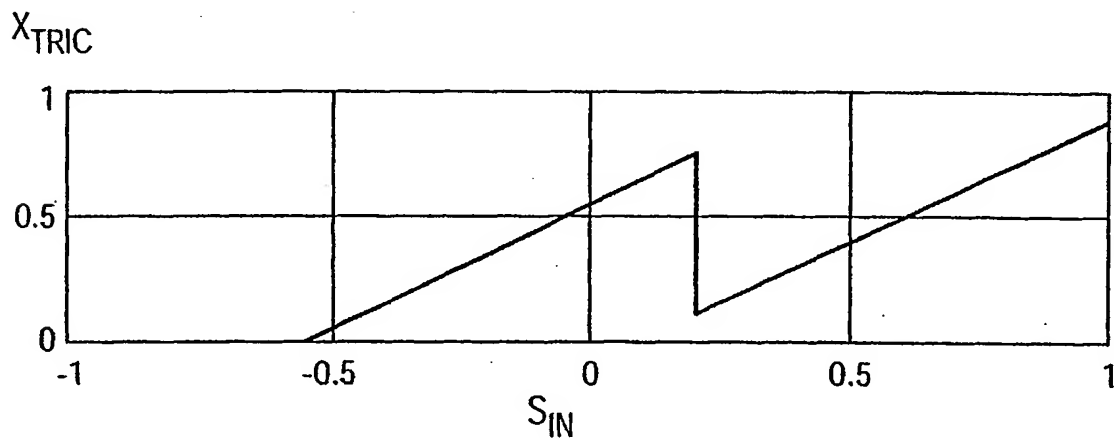


FIG 23

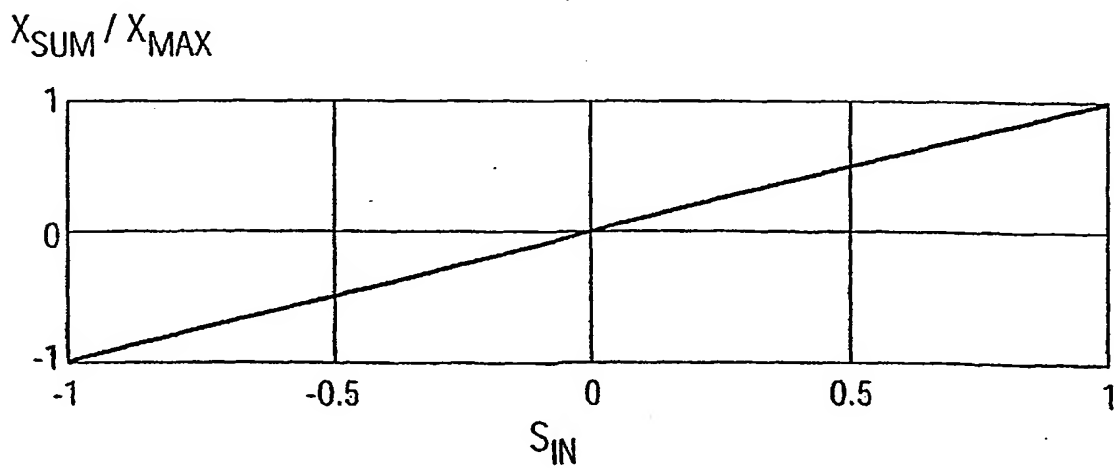


FIG 24

